Search strategy for Medline and CINAHL.

1     Catheterization, Peripheral/mt, st, ut [Methods, Standards, Utilization] (2034)

2     limit 1 to (english language and humans and "all adult (19 plus years)") (719)

3     (tool\* or rule\* or algorithm\*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (777152)

4     2 and 3 (20)

Additional studies that focused on difficult insertion in the Emergency Department (ED) were retrieved from EMBASE and The Cochrane Database of Systematic Reviews, Google Scholar using the search terms: “peripheral intravenous cannulation”, “difficult vascular access insertion” “Vascular Access Device”, “Catheterization”, “Peripheral Catheterization” and “Peripheral Cannula\*”.